

IN THE SPECIFICATION

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ABSTRACT

The present invention is to produce a silicon crystal wherein the boron concentration in the silicon crystal and the growth condition V/G are controlled so that the boron concentration in the silicon crystal is no less than 1×10^{18} atoms/cm³ and the growth condition V/G falls within the epitaxial defect-free region α_2 whose lower limit line LN1 is the line indicating that the growth rate V gradually drops as the boron concentration increases. ~~Further, the present invention is to produce a~~ A silicon wafer is also produced wherein the boron concentration in the silicon crystal and the growth condition V/G are controlled so as to include at least the epitaxial defect region β_1 , and ~~the both the~~ heat treatment condition of the silicon crystal and the oxygen concentration in of the silicon crystal are controlled so that no OSF nuclei grow to OSFs. Moreover, ~~the present invention is to produce a silicon crystal wherein the boron concentration in the silicon crystal and the growth condition V/G are controlled so that they fall in the vicinity of the lower limit line LN3 within the epitaxial defect free region α_1~~